

## Jet Propulsion Laboratory California Institute of Technology

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June 10, 2002

Refer to: 930-02-007-ESB:lc

TO: Distribution

FROM: Eugene S. Burke

SUBJECT: Minutes for the Joint Users Resource Allocation Planning Committee Meeting held

May 16, 2001.

#### NEXT JURAP MEETING:

Thursday, June 20, 2002 JPL Bldg. 303, Room 411, at 1:00 p.m.

Meet-Me Line: (818) 354-2626

Attendees:

B. Bryner
G. Burke
D. Doody
K. Gage
J. Hall
B. Polansky
B. Ryan
M. Slade
M. Medina
J. Valencia

The Joint Users Resource Allocation Planning Committee meets monthly to review the status of Flight Projects, the requirements of other resource users, and to identify future requirements and possible conflicts.

#### Introductory Remarks & Conflict Resolutions – G. Burke

G. Burke chaired the meeting and welcomed the attending Mission representatives to the JURAP meeting. The antenna downtime schedule is under review, and the NSP downtimes require major rework. There will be a major shifting of antenna downtimes. Fitting requests into the downtime schedule with minimal impact on Mission operations is going to be a major challenge. The August 13, 2002 Resource Allocation Review Board (RARB) is rapidly approaching and the Resource Allocation Planning Team (RAP) is working toward meeting that challenge.

#### RARB Action Items - G. Burke

Action Items (AI) from the February 2002 Resource Allocation Review Board (RARB) were reviewed. Action Items 1, 2, and 12 remain open. Action Items 6, and 9 are pending until the respective Project User Loading Profiles (ULP) are submitted to the Resource Analysis Team.

Action Items 7, 8, and 10 are now closed. To close AI #7, the Mars Project Office established weekly priorities for all Mars missions between November 2003 and March 2004. Cassini moved the GWE to begin on October 20, 2003, closing AI #8. C. Jacobs provided a prioritized support decision tree to assist in scheduling the DSN Clock Sync and Catalog M&E activities. On-going weekly meetings are being held with R. Miller, to address open Action Item No. 12, the issue of possibly using the antenna at New Norcia to augment Ulysses' need for continuous coverage from November 2003 through February 2004.

#### Resource Analysis Team – N. Lacey

Preparations for the August 13, 2002 RARB are in progress. All supporting documentation has been provided to the respective Projects via email. In addition, the Project User Loading Profiles (ULPs), Major Mission Events and other RARB support documentation are posted to the RAPSO web site for individual Project review and action. The August RARB will cover contention periods in 2003 through 2005. Testing and training of MADB/TIGRAS is ongoing. Special studies in progress include: 1) Lunar-A; 2) MCD3 Study; 3) Messenger; and 4) TDR-J. Major Antenna Downtime replanning and Mid-Range schedule development is ongoing. Weeks 23-28 were released to the DSN on April 02, 2002. Weeks 29–32 will be released on May 24, 2002, and negotiations for Weeks 47-50 will begin.

#### DSS Downtime Forecast - J. Valencia

There are a number of changes to the DSN Major Antenna Downtime schedule. DSS-14, DSS-15, DSS-54 and DSS-45 NSP tasks have been rescheduled from 2002 to 2003. The proposed DSS-25 X-band downtime in Weeks 36-42 in 2003, needs to be negotiated with DSN users. The proposed Servo Drive downtime at DSS-66 in Weeks 29-33, 2003, needs to be negotiated with the DSN users. DSS-14 Antenna Controller Replacement (ACR) start time has been rescheduled from Week 28 to Week 29, to accommodate the Cassini SOI event in Week 27. The proposed ACR downtime at DSS-15 in 2004, will need to be negotiated with the DSN users, as will the proposed downtime at DSS-46, for the Servo Drive.

#### DSN Operations – J. Hodder

No presentation this month.

#### Goldstone Solar System Radar - M. Slade

On April 2002, GSSR achieved a significant milestone, with the success of the DSS-14 to Greenbank Telescope's (GBT) detection of Near Earth Asteroid (NEA 1999 GU3). Single-station observations of 1999 GU3, using only the DSS-14 antenna on April 27, 2002, were less successful. The GSSR support in May 2002, with DSS-14 transmitting and GBT receiving, was also successful in obtaining observations of Mercury in support of the Messenger Project.

#### Radio Astronomy / Special Activities – G. Martinez

No presentation this month.

#### JURAP Science Advisor – E. Smith

No presentation this month.

#### **FLIGHT PROJECTS REPORTS**

#### Galileo – M. Medina (for B. Compton)

Galileo routine activities include propulsion maintenance activities, and gyro performance tests. Significant events included conducting tests designed to collect high-resolution data to better characterize the DMS anomaly and analyze the data collected from the Magnetometer and Dust Detector Instruments during the cruise part of the orbit.

#### Stardust - R. Ryan

The spacecraft is healthy and DSN support has generally been good this reporting period. Stardust is presently at 2.40 Astronomical Units from Earth with a round-trip-light-time of 40 minutes, with Earth range decreasing. The spacecraft's solar panels, battery, and power systems performed normally as it passed through Aphelion in April 2002. The Project continues to monitor the spacecraft's power system near maximum solar range, especially during each Aphelion. The Planning and testing for the Comet Wild-2 encounter is ongoing, and an encounter test using Annefrank is planned for November 2002.

#### Pioneer-10 - R. Ryan

The DSN supported Pioneer-10 on April 26 & 27, at DSS-14 and DSS-63, and successfully captured all downlinked data. The Round Trip Light Time (RTLT) is approximately 22 hours.

#### Chandra - K. Gage

Chandra spacecraft operations are nominal. DSN Operations support is adequate; the Project cited a number of difficulties in support when recovering data from the Central Data Recorder (CDR) located at JPL. Delays in receiving data from Madrid were also experienced. The 26m automation equipment (TCP) shows good results and the Project is looking forward to fully transitioning over. Ken Gage expressed concern with the proposed DSS-66 Servo Drive downtime in 2003, which is planned concurrently with DSS-54 NSP downtime. The concern is that Chandra will lose northern hemisphere coverage. New discoveries in the field of astrophysics made possible by Chandra, include: twin quasars, super massive black holes, and Quark star phenomena. Additional detailed information on this topic is available at: <a href="http://Chandra.Harvard.Edu">http://Chandra.Harvard.Edu</a>

#### Voyager – J. Hall

Voyager 1 and Voyager 2's operational status is nominal and the overall DSN support is good. The Project experienced a second occurrence where the DSN low power transmitter was not able to obtain the required 18kWatt transmitter output power level. Voyager 1 heliocentric distance is 84.7 AU, with RTLT approximately 23h 15m. Voyager 2 heliocentric distance is 67.1 AU, with RTLT approximately 18h 30m.

#### Cassini – D. Doody

Operations are essentially nominal and minor spacecraft instrument anomalies and recoveries are worked near-real-time. The spacecraft will remain in Quiet Cruise Sub-phase through July 08, 2002. The decision of whether or not to pre-heat the Huygen Probe before its release is being discussed. Results from the last SSI decontamination were very encouraging, with decontamination levels dropping from approximately 70% to 5%. In addition, Cassini operations conducted RSS pattern and bore-site calibrations using the S-, X-, and Ka-band links. Gravity Wave No. 1 (GWE#1) data

collection phase has concluded, and data is being studied and evaluated by the science community. The next prime mission science events will be the Superior Conjunction RS experiment, planned for DOY 157 through 187 in 2002; and Gravity Wave Experiment No. 2 (GWE#2), planned for DOY 341 2002 through DOY 016 2003.

*ISTP*, *WIND*, *POLAR*, *SOHO*, *GEOTAIL*, *Cluster II – A. Chang* No presentation this month.

*MAP*, *ACE*, *IMAGE*, *and Genesis* – *S. Waldherr* No presentation this month.

*Mars Mission Management Office (MMO) - E. Brower* No presentation this month.

#### Ulysses - B. Brymer

Spacecraft operations are nominal. Ulysses is in continuous view from the northern hemisphere and cannot be viewed from the Southern hemisphere. Spacecraft reconfigurations and instrument calibrations were performed as required, and Earth-pointing maneuvers were performed every four days. The Project is requesting continuous coverage support in 2003 and 2004, on a best effort basis.

The next JURAP meeting will be held:

Thursday, June 20, 2002, at JPL in <u>Bldg. 303, Room 411</u>, at 1:00 p.m.

Meet-Me Line: (818) 354-2626

ACE	Genesis
Afkhami, F GSFC m/s 428.2	Arroyo, B
Sodano, R. J GSFC m/s 581.0	Burnett, D. S
	Hirst, E. A
Canberra Deep Space Communications Complex	Sasaki, C. N. (PM)
Churchill, P CDSCC	Sweetnam, D. N
Jacobsen, R	Tay, P
O'Brien, J. J	Yetter, K. E
Ricardo, L	
Robinson, A CDSCC	<b>Goldstone Deep Space Communications Complex</b>
Wiley, B CDSCC	Holmgren, E DSCC-25
	Massey, K
Cassini	McCoy, J
Arroyo, B	Millmore, D
Chin, G. E	
Doody, D. F	Goldstone Orbital Debris Radar (GODR)
Frautnick, J. C	Goldstein, R. M. (PM)
Gustavson, R. P	Wolken, P. R
Maize, E. H	
Mitchell, R. T. (PM)	Goldstone Solar System Radar (GSSR)
Webster, J. L	Haldemann, A. F
	Hills, D. L
Chandra	Ostro, S. J. (PS)
Bucher, S	Slade, III, M. A. (PM)
Gage, K. R SAO	Wolken, P. R
Lavoie, A. R. (PM) MSFC Org. FD03	
Marsh, K SAO	Gravity Probe-B
Weisskopf, M. C. (PS) MSFC Org. SD50	Arroyo, B
Wicker, D SAO	Keiser, M. (PS) Stanford Univ.
Wright, G. M MSFC Org. FD03	Shapiro, Prof. I. I Smithsonian Astrophys. Obsrv.
Comet Nucleus Tour (CONTOUR)	IMAGE
Arroyo, B	Abramo, C. A
Chiu, M. C. (PM)	Burley, R. J
Farquhar, R	Green, J. L GSFC m/s 630
Holdridge, M	Gleen, J. E
Holdridge, M ME 131( 31)	INTEGRAL
Dawn	Arroyo, B
Arroyo, B	Clausen, K. (PM) ESA/ESTEC
Gavit, S. A. (PM)	Maldari, P ESA/ESOC
·	,
Deep Impact	IPN-ISD / General
Arroyo, B	Doms, P. E
Blume, W. H	Polansky, R. G
McKinney, J. C	Stelzried, C. T
Muirhead, B. K. (PM)	Weber, III, W.J
T.	IDM IOD / DOMO E
Europa	IPN-ISD / DSMS Engineering
Arroyo, B	Freiley, A. J
McNamee, J.B. (PM)	Kimball, K. R
ышрын, к. <i>н</i>	Kurtik, S. C
Galileo	Osman, J. W
Compton, B	Sible, Jr., R. W
Huynh, J. C	Statman, J. I
Medina-Gussie, M	Smilling 8 1
Pojman, J. L	
Theilig, E. E. (PM)	
o, 2- ()	

IPN-ISD / DSMS Operations	ISTP (Cluster II)
Almassy, W. T	Abramo, C. A
Berman, A. L	Christensen, J. L GSFC m/s 404.0
Covate, J. T	Dutilly, R. N GSFC m/s 581.1
Dillard, D. E	Gurnett, D U. of Iowa
Frazier, R	Mahmot, R. E. (PM) GSFC m/s 444.0
Gillam, I. T	Pickett, J U. of Iowa
Green, J. C	
Hodder, J. A	ISTP (GEOTAIL/POLAR/SOHO/WIND)
Knight, A. G	Abramo, C. A
Landon, A. J	Alexander, H
Martinez, G	Bush, R. I Stanford Univ.
Nevarez, R. E	Carder, M. E GSFC 450.C
Recce, D. J	Dutilly, R. N GSFC m/s 581.1
Roberts, J. P	Giles, B. L GSFC m/s 692.0
Salazar, A. J	Hearn, S. P GSFC m/s 450.C
Schroeder, H. B	Mahmot, R. E GSFC m/s 444.0
Short, A. B	Machado, M. J GSFC m/s 428.2
Wackley, J. A	Milasuk-Ross, J GSFC m/s 428.5
Watzig, G. A	Miller, K. A GSFC m/s 450.C
Wert, M	Nace, E. M GSFC m/s 450.8
	Odendahl, S. K
IPN-ISD DSMS Plans & Commitments	
Abraham, D. S	JPL/General
Altunin, V. I	Burgess, L. N
Bathker, D. A	Burton, M. E
Benson, R. D	Finley, S. G
Beyer, P. E	Gershman, R
Black, C. A	Holladay, J. A
Cesarone, R. J	Jurgens, R. F
Chang, A. F	Kahn, P. B
Gillette, R. L	Kliore, A. J
Holmes, D. P	Kobrick, M
Kwok, A	McClure, J. R
Luers, E. B	Moore, W. V
Miller, R. B	Morabito, D. D
Moyd, K	Robbins, P. E
Peng, T. K	Silva, A
Slusser, R. A	Smith, J. L
Waldherr, S	Taylor, A. H
Yetter, B. G	Toyoshima, B
Teller, D. G	Williams, B. G
IPN-ISD / DSMS RAPSO	Winterhalter, D
Bartoo, R. H	Woo, H. W
Borden, C. S	Yung, C. S
Burke, E. S	<i>C</i> ,
Hampton, E	Lunar A
Kehrbaum, J. M	Arroyo, B
Kim, K	Ryne, M.S
Lacey, N	
Lineaweaver, S	Madrid Deep Space Communications Complex
Martinez, K. A	Gimeno, J MDSCC
Morris, D. G	Gonzalez, C
Valencia, J	Martin, A
Wang, Y-F	Rosich, A
Zendejas, S. C	
	MAP
	Abramo, C. A
	Coyle, S. E
	Dew, H. C
	Mahmot, R. E. (PM) GSFC m/s 444.0

Mars Exploration Rover (MER A & B)	NASA Headquarters
Adler, M	Costrell, J. A Code MT
Arroyo, B	Geldzahler, B Code SR
Crisp, J. A. (PS)	Hertz, P Code SR
Erickson, J. K	Holmes, C. P Code SR
Ludwinski, J.M	Spearing, R. E Code M-3
Roncoli, R. B	Spearing, R. E
Theisinger, P. C. (PM)	NASA/ARC/General
Theisinger, 1. C. (1141)	Campo, R. A
Mars Express Orbiter	Campo, R. M
Arroyo, B	
Horttor, R. L. (PM)	NASA/GSFC/General
Thompson, T. W	Barbehenn, G. M GSFC m/s 440.8
Thompson, 1 300 227	Levine, A. J
Mars Global Surveyor	Martin, J. B
Albee, A. (PS)	Martin, J. D
Arroyo, B	NASA/SOMO
Brower, E. E	Dalton, J. T GSFC m/s 720.0
	Dowen, A. Z
Thorpe, T. E. (PM)	
Yetter, K. E	Hall, V. F JSC Code TG
M D Off	Morse, G. A JSC Code TA
Mars Program Office	Thompson, E. W JSC Code GA
Cutts, J. A	NOZOMI (Dlamat D)
Jordan, Jr., J. F	NOZOMI (Planet B)
McCleese, D. J	Arroyo, B
Naderi, F. M	Ryne, M. S
Whetsel, C	Tay, P
M D ' Ol' D'	Yetter, K. E
Mars Reconnaissance Orbiter Project	DEDD / Mr. * Mr. A OCC
Arroyo, B	PFPD / Mission Management Office
Graf, J. E. (PM)	Morris, R. B
Johnston, M. D	Varghese, P
Lock, R. E	TO 12 A 4
M 2001 O 1 M' '	Radio Astronomy
Mars 2001 Odyssey Mission	Klein, M. J. (PM)
Arroyo, B	Kuiper, T. B. (PS)
Gibbs, R.G	Martinez, G
Harris, J. A	Wolken, P. R
Landano, M. R. (PM)	De E CH C
	Reference Frame Calibration
Saunders, R. S. (PS)	Altunin, V. I
Spencer, D. A	Cangahuala, A. (PM)
MEGA	Jacobs, C
	Degette (DOSE)
Altunin, V. I	Rosetta (ROSE)
Simul, J. O. (FM)	Alexander, C. J. (PM)
MESSENCED	Ellwood, J. (PM) ESA/ESTEC
MESSENGER Arroyo, B	Schwehm, G. H. (PS) ESA/ESTEC
	Warhaut, M ESA/ESTEC
Farquhar, R. (PM)	warnaut, M ESA/ESOC
Peterson, M	Snago Coodogy
Muses C	<b>Space Geodesy</b> Wolken, P. R
Muses-C	worker, r. k
Arroyo, B	Chase Infrared Telegrape Facility (CIDTE)
	Space Infrared Telescope Facility (SIRTF)
Smith, J.G (PM)	Arroyo, B
	Kwok, J. H

ST-5
Bibyk, I GSFC m/s 581.0
Carlisle, C GSFC m/s 532.0
McLennan, Dr. D. D. (PM) GSFC m/s 495.0
Slavin, J. A. (PS) GSFC m/s 696.0
Stardust
Arroyo, B
Duxbury, T. C. (PM)
Hirst, E
Ryan, R. E
Tay, P
Yetter, K. E
Ulysses / Voyager
Arroyo, B
Brymer, B. F
Cummings, A. C
Hall, Jr., J. C
Massey, E. B. (PM)
Medina-Gussie, M
Nash, J. C
Smith, E. J. (PS - ULS)
Stone, E.C. (PS - VGR) CIT 220-47
Yetter, K. E
Other Organizations
Crimi, G. F SAIC
Laemmel, G DLR-GSOC
Wanke, H

Please mark any additions, deletions, or corrections to this distribution list and return to:

David G. Morris Jet Propulsion Laboratory 4800 Oak Grove Drive, 303-403 Pasadena, CA 91109 / 818-393-3535 email: David.G.Morris@jpl.nasa.gov

# JOINT USERS RESOURCE ALLOCATION PLANNING (JURAP)

# Action Item Status From February 12, 2002 RARB

(Resource Allocation Review Board)

**David G. Morris** 

May 16, 2002

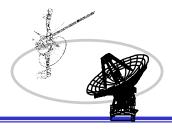


## **Action Item Status**

## Since Last JURAP:

- Action Items 7, 8 and 10 were closed
  - #7 (Mars Priorities)
    - Provided Weekly Priorities of All Mars Missions During Late 2003 - 2004
  - #8 (Cassini Gravitational Wave Experiment)
    - Moved December 2003 January 2004 Experiment to October – November 2003
  - #10 (DSN Clock Sync VLBI and CAT M&E)
    - Provided Decision Tree for Reduced Support Periods
- Action Items 6 and 9 are pending until ULP and Events Sheets are submitted to Resource Analysis Team
- Action Items 1, 2, and 12 remain open





## **Action Item Summary**

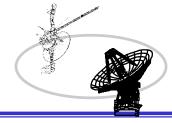
<u> </u>	Year	Month(s)	System	Responsible	Due Date	<u>Status</u>
01	2004	January	MER	J. Erickson	6/1/2002	Open

**ACTION:** Provide Final Landing Site coordinates (SPK file) for both Rovers one year prior to launch. (Reference A.I. #7 of August 13, 2001 RARB)

<i>AI</i> #	Year	Month(s)	System	Responsible	Due Date	Status
02	2003	January-December	DSMS P & C	R. Miller	4/18/2002	Open

**ACTION:** Investigate and Negotiate the feasibility of alternate assets providing current DSN Catalog Maintenance and Enhancement (CAT M&E) radio sources.





## **Action Item Summary**

<i>AI</i> #	Year	Month(s)	System	Responsible	Due Date	<b>Status</b>
03	2003	January-December	SGP	N. Lacey P. Wolken	4/18/2002	Closed

**ACTION:** As a result of recommending deletion of the entire 2003 request of Space Geodesy Program, provide a listing of opportunities to the Project to assist in their re-planning a reduced (hours) experiment.

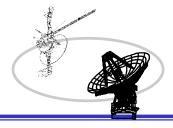
**RESPONSE:** (4/16/02) The deletion of the 34H Antenna Controller Replacement tasks in 2003 has created 24-hour support opportunities for SGP as follows:

DSS-15: Weeks 14, 15, 16, 17 and 18 (April 2 through May 6).

DSS-45: Weeks 37, 38, 39, 40, 41, 42 and 43 (September 10 through October 28).

DSS-65: Weeks 37, 38, 39, 40, 41, 42 and 43 (September 10 through October 28).





## **Action Item Summary**

<u> </u>	Year	Month(s)	System	<b>Responsible</b>	Due Date	Status
04	2003	January	SIRTF	P. Beyer	4/1/2002	Closed

**ACTION:** Perform telecom analysis to determine the adequacy of DSS-63 supporting spacecraft on day of launch. The expressed concern is that the DSS-63 X-band transmitter may saturate the SIRTF receiver. (DSS-65 has Downtime; DSS-54 is supporting Cassini GWE.)

**RESPONSE:** (4/4/02) Using 200 Watts from DSS-63, the P<sub>total</sub> into the Observatory will be -78 to -80 dBM. This should pose no risk to the spacecraft. HOWEVER, if the trajectory is the slightest bit off nominal, it is not good engineering practice to do a search with the 70m beamwidth. The 34m antenna is much more desirable for contingency purposes, and SIRTF should have priority use of DSS-54.



## **Action Item Summary**

<i>AI</i> #	Year	Month(s)	System	Responsible	Due Date	<u>Status</u>
05	2003	January-April	DSN	M. Wert	4/1/2002	Closed

**ACTION:** Investigate the impact to Operations of deleting or reducing the 70m Antenna Calibrations in this period.

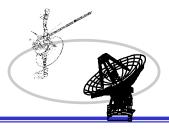
**RESPONSE:** (4/10/02) Minimum support has been analyzed and is provided:

- 1. GDSCC -- DSS14 can support forecast load if two 4-hour calibration blocks per month are provided Jan-Apr '03;
- 2. CDSCC -- DSS-43 can support at one 4-hour calibration block per month during Jan-Apr '03;
- 3. MDSCC -- DSS-63 can support at one 4-hour calibration block per month during Jan-Apr '03.

<i>AI</i> #	Year	Month(s)	System	Responsible	Due Date	Status
06	2003	November	MER-A,Odys	ssey J. Erickson	5/1/2002	Pending

**ACTION:** MER-A agreed to modify DSN requests for Odyssey and MGS to fulfill required support in Weeks 46-47 in November 2003.





## **Action Item Summary**

<i>AI</i> #	Year	Month(s)	System	Responsible	Due Date	Status
<b>07</b>	2003-2004	<b>December-February</b>	Mars Program	C. Whetsel	5/1/2002	Closed

**ACTION:** Mars Program will evaluate support problems during the mid-December 2003 through end of February 2004 timeframe. All NASA and non-NASA Mars missions requirements will be evaluated and coordinated in light of the NASA Mars mission priorities and provided in time to be addressed at the August 2002 RARB.

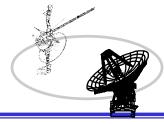
**RESPONSE:** (4/26//02) Weekly priorities were established for all Mars Missions for this period.

<u> </u>	Year	Month(s)	System	Responsible	Due Date	Status
08	2004	January	Cassini	B. Mitchell	5/1/2002	Closed

**ACTION:** Cassini, based upon the recommendations of taking daily 1-4 hour gaps during the Canberra/Madrid overlap in January 2004, will evaluate impact to GWE. In addition, evaluate sliding the entire 40 days for the GWE earlier by a few weeks.

**RESPONSE:** (5/14/02) Cassini will move the GWE to begin October 20, 2003 through November 29, 2003.





## **Action Item Summary**

<i>AI</i> #	Year	Month(s)	System	Responsible	Due Date	<u>Status</u>
09	2004	January	MER-B	J. Erickson	4/18/2002	Pending

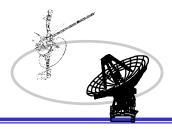
**ACTION:** Mars Exploration Rover Project will evaluate whether MER-B can reduce coverage during critical MER-A TCMs (4, 5, and 6) in order that the support is used for a MER-A required hotbackup 34m antenna.

AI# $Y$	<u>Year Month(s)</u>	System	Responsible	Due Date	Status
10 2004	4 January	DSN	C. Jacobs	4/18/2002	Closed

**ACTION:** Provide analysis of impact (e.g., to MER-B landing accuracy) of moving DSN Clock Sync VLBI out to Week 4.

**RESPONSE:** (5/1/02) Provided a prioritized alternative support decision tree to assist scheduling of DSN Clock Sync and Catalog M&E activates in order to maintain minimum support.





## **Action Item Summary**

<i>AI</i> #	Year	Month(s)	System	Responsible	Due Date	<b>Status</b>
11	2004	January	MER	J. Ludwinski	2/26/2002	Closed

**ACTION:** Provide MER Project Surface Operations Viewperiods for the four primary and two alternate landing sites to RAPSO (J. Kehrbaum).

**RESPONSE:** Complete set of viewperiods were provided 8 March 2002.

<u> </u>	Year	Month(s)	System	Responsible	Due Date	Status
12	2003-2004	<b>November-February</b>	DSMS P & C	R. Miller	5/1/2002	Open

**ACTION:** Identify Risk Posture for individual mission's key events to plan steps the DSN can do to mitigate foreseeable anomalies (e.g., spacecraft emergency, station outages, MCD3 contention, etc.).



## **JOINT USERS RESOURCE ALLOCATION PLANNING COMMITTEE**



# Resource Analysis Team

May 16, 2002

Napoleon Lacey

## InterPlanetary Network and Information Systems Directorate DEEP SPACE MISSION SYSTEMS (DSMS)



## ◆ RESOURCE NEGOTIATION STATUS

- 2002 WEEKS 23 28 (THRU 07/14/2002) WAS RELEASED TO DSN ON 04/02/2002
- 2002 WEEK 29 32 (THRU 08/11/2002) IS DUE TO BE RELEASED ON 05/24/2002
- 2002 WEEKS 47 50 (THRU 12/15/2002) WILL GO INTO NEGOTIATIONS STARTING 05/24/2002

05/16/2002 <u>NL-2</u>

## InterPlanetary Network and Information Systems Directorate DEEP SPACE MISSION SYSTEMS (DSMS)





- CASSINI GWE ASSESSMENT
- FOUR ANTENNAS DOWN, DSS-15 PROPOSAL
- GOES-N
- MEX LOAD STUDY

## ON-GOING ACTIVITIES

- MADB/TIGRAS TESTING AND TRAINING
- DOWNTIME REPLANNING
- INTEGRAL LAUNCH CHANGE
- LUNAR-A LOAD STUDY
- MCD3 STUDY
- MESSENGER LOAD STUDY
- TDRS-J

## InterPlanetary Network and Information Systems Directorate DEEP SPACE MISSION SYSTEMS (DSMS)



- **◆ RARB AUGUST 13, 2002** 
  - CONTENTIONS TO COVER YEARS 2003 THRU 2005

HTTP://RAPWEB.JPL.NASA.GOV

## DSN User / Mission Planning Set 2002 - 2012

ONGOING/PLANNED PROJECTS								
Project	Acronym	Launch or Start	EOPM	EOEM				
DSN VLBI Clock Sync and Catalog M&E	DSN							
DSS Maintenance	DSS							
European VLBI Network	EVN							
Ground Based Radio Astronomy	GBRA							
Space Geodesy	SGP							
Pioneer 10 ACS	PN10	03/03/72	07/01/97	09/30/08				
Voyager 2	VGR2	08/20/77	10/15/89	12/31/05				
Voyager 1	VGR1	09/05/77	12/31/80	12/31/05				
Goldstone Solar System Radar	GSSR	04/01/85						
Galileo	GLLO	10/18/89	12/07/97	09/21/03				
Ulysses	ULYS	10/06/90	09/11/95	09/30/04				
ISTP - Geotail	GTL	07/24/92	07/24/95	09/30/05				
ISTP - Wind	WIND	11/01/94	11/01/97	09/30/05				
ISTP - SOHO	SOHO	12/02/95	05/02/98	12/30/05				
ISTP - Polar	POLR	02/22/96	08/23/97	09/30/05				
Gravity Probe B	GPB	06/01/96	01/01/05	TBD				
Mars Global Surveyor	MGS	11/07/96	02/01/01	06/01/04				
Advance Composition Explorer	ACE	08/25/97	02/01/01	01/31/05				
Cassini	CAS	10/15/97	06/30/08	06/30/10				
Nozomi (Planet-B)	NOZO	07/03/98	12/31/05	TBD				
Stardust	SDU	02/07/99	01/14/06					
Chandra X-ray Observatory	CHDR	07/23/99	07/24/09	07/24/14				
Imager for Magnetopause-to-Aurora Global Exploration	IMAG	03/25/00	05/30/02	05/30/04				
Cluster 2 - S/C #2 (Samba)	CLU2	07/16/00	02/15/03	09/19/05				
Cluster 2 - S/C #3 (Rumba)	CLU3	07/16/00	02/15/03	09/19/05				
Cluster 2 - S/C #1 (Salsa)	CLU1	08/09/00	02/15/03	09/19/05				
Cluster 2 - S/C #4 (Tango)	CLU4	08/09/00	02/15/03	09/19/05				
2001 Mars Odyssey	M01O	04/07/01	08/01/04	09/19/07				
Microwave Anisotropy Probe	MAP	06/30/01	10/01/03	10/01/06				
Genesis	GNS	08/08/01	09/08/04					
Mission Enhancement by Ground-based Astronomy	MEGA	02/01/02	12/31/03					
Comet Nucleus Tour (CONTOUR)	CNTR	07/01/02	09/05/08	TBD				
International Gamma Ray Astrophysics Lab	INTG	10/17/02	12/18/04	12/18/07				
MUSES - C	MUSC	11/20/02	06/05/07					
Space Infrared Telescope Facility	STF	01/09/03	04/19/08					
Rosetta	ROSE	01/13/03	07/10/13					
Mars Express Orbiter	MEX	05/23/03	02/11/06	08/03/08				
Mars Exploration Rover - A	MERA	05/30/03	04/06/04	05/11/04				
Mars Exploration Rover - B	MERB	06/25/03	04/27/04	06/15/04				
Deep Impact	DEEP	01/02/04	08/05/05					
Messenger	MSGR	03/10/04	04/06/10					
Space Technology 5	ST5	07/15/04	10/15/04	TBD				
The state of the s	RADA	06/15/05	06/15/10	TBD				

<sup>\*</sup> Planning dates

## **DSN User / Mission Planning Set**

### 2002 - 2012

ADVANCED PLANNING PROJECTS								
Project	Acronym	Launch or Start	EOPM	EOEM				
Lunar - A	LUNA	08/09/03	07/18/04					
Selene	SELN	07/04/05	09/30/06					
Mars Reconnaissance Orbiter	MRO	08/08/05	11/26/08	12/31/10				
Stereo Ahead	STA	11/15/05	02/18/08	02/15/11				
Stereo Behind	STB	11/15/05	02/18/08	02/15/11				
Dawn	DAWN	05/27/06	07/26/15	TBD				
Kepler	KPLR	10/15/06	10/14/10	TBD				
Mars Competed Scout 2007	M07S	09/04/07	08/19/08	TBD				
Mars CNES Premier Orbiter 2007	M07O	09/11/07	08/11/08	08/12/10				
Mars ASI/NASA Marconi Telecommunications Orbiter 2007	M07T	08/23/07	07/18/18	TBD				
Mars ASI/NASA Science Orbiter 2009	M09O	10/04/09	08/29/12	TBD				
Mars Smart Lander 2009	M09L	10/25/09	08/09/13	TBD				
Solar Probe	SOLP	05/01/10	02/14/14	TBD				
ARISE	ARSE	06/15/10	06/15/15					
Highly Advanced Laboratory for Communications and Astronomy	VSP2	06/15/10	06/15/15					
Mars CNES MSR Lander 2011	M11L	10/30/11	09/10/14	TBD				
Mars CNES MSR Orbiter 2011	M11O	10/30/11	07/22/14	TBD				

	DSN Resource Implementation Planning Matrix										
Station	Subnet	Delivery Date	S-Band Down	S-Band Up	X-Band Down	X-Band Up	20kW X-Band	Ka-Band Down	Ka-Band Up	NSP	
DSS-14	70M	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	TBD	N/A	05/13/03	
DSS-15	34HEF	XXXX	XXXX	N/A	XXXX	XXXX	XXXX	TBD	N/A	04/10/03	
DSS-16	26M	XXXX	XXXX	XXXX	N/A	N/A	N/A	N/A	N/A	N/A	
DSS-24	34B1	XXXX	XXXX	XXXX	XXXX	12/23/02	12/23/02	10/01/05	N/A	12/03/02	
DSS-25	34B2	XXXX	N/A	N/A	XXXX	XXXX	04/07/03	XXXX	XXXX	04/07/03	
DSS-26	34B2	04/02/03	N/A	N/A	04/02/03	04/02/03	04/02/03	04/02/03	N/A	04/02/03	
DSS-27	34HSB	XXXX	XXXX	XXXX	N/A	N/A	N/A	N/A	N/A	N/A	
DSS-34	34B1	XXXX	XXXX	XXXX	XXXX	XXXX	04/07/03	01/01/05	N/A	04/07/03	
DSS-43	70M	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	TBD	N/A	02/10/03	
DSS-45	34HEF	XXXX	XXXX	N/A	XXXX	XXXX	XXXX	TBD	N/A	05/03/03	
DSS-46	26M	XXXX	XXXX	XXXX	N/A	N/A	N/A	N/A	N/A	N/A	
DSS-54	34B1	XXXX	XXXX	XXXX	XXXX	XXXX	09/01/03	08/01/06	N/A	05/13/03	
DSS-55	34B2	11/01/03	N/A	N/A	11/01/03	11/01/03	11/01/03	11/01/03	N/A	11/01/03	
DSS-63	70M	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	TBD	N/A	04/07/03	
DSS-65	34HEF	XXXX	XXXX	N/A	XXXX	XXXX	XXXX	TBD	N/A	02/10/03	
DSS-66	26M	XXXX	XXXX	XXXX	N/A	N/A	N/A	N/A	N/A	N/A	

XXXX = Capability Currently Exists

N/A = Capability Not Planned 05/09/02

# Major DSN Antenna Downtime Status

Jose Valencia May 16, 2002

## **Major Antenna Downtimes**

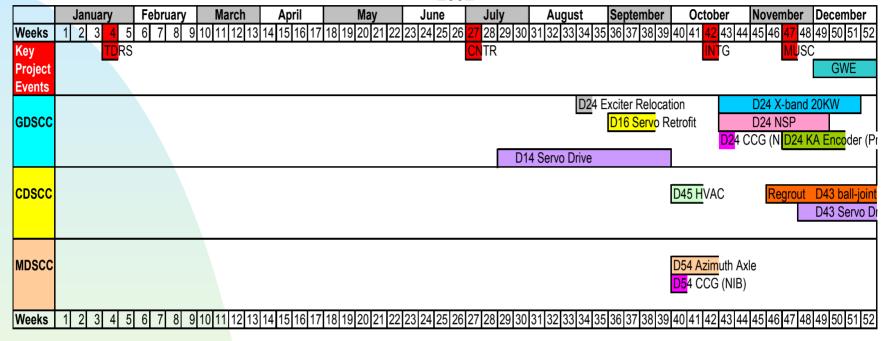
	MAJOR DSN DOWNTIMES by SITE by Year									
Year	Site	Description	Start	End	Duration (Days)	Weeks	Start DOY	End DOY		
2002	DSS 14	70M Servo Drive Replacement	07/15/02	09/27/02	75	29-39	196	270		
2002	DSS 16	Servo Drive Retrofit	09/03/02	09/17/02	15	36-38	246	260		
2002	DSS 24	NIB - NSP Implementation	10/21/02	12/02/02	43	43-49	294	336		
2002	DSS 24	20 KW X-Band TXR Installation	10/21/02	12/22/02	63	43-51	294	356		
2002	DSS 24	NIB - KA-Band Encoder Mech Mod-Kit Installation	10/21/02	11/09/02	20	43-45	294	313		
2002	DSS 24	NIB - CCG Task	10/21/02	10/27/02	7	43-43	294	300		
2002		Exciter Relocation	08/21/02	08/25/02	5	34-34	233	237		
2002		70M Servo Drive Replacement	11/25/02	02/09/03	77	48-06	329	040		
2002		NIB - Ball-Joint Pad Refurbishment	11/25/02	02/09/03	77	48-06	329	040		
2002	DSS 43	Hydrostatic Bearing Regrout	11/17/02	11/24/02	8	46-47	321	328		
2002	DSS 45	DSS 45 HVAC Upgrade	10/01/02	10/08/02	8	40-41	274	281		
2002		NIB - KA Band Encoder Mech Mod Kit Installation	10/01/02	10/20/02	20	40-42	274	293		
2002		Azimuth Axle Replacement	10/01/02	10/20/02	20	40-42	274	293		
2002		NIB - CCG task	10/01/02	10/07/02	7	40-41	274	280		
2003	DSS 14	NSP Implementation	04/21/03	05/12/03	22	17-20	111	132		
2003	DSS 15	NSP Implementation	03/10/03	04/09/03	31	11-15	069	099		
2003		NSP Implementation	02/10/03	04/06/03	56	07-14	041	096		
2003		NIB - 20 KW X-Band TXR Installation	02/10/03	04/06/03	56	07-14	041	096		
2003		NSP Implementation	02/10/03	04/06/03	56	07-14	041	096		
2003		NIB - 20 KW X-Band TXR Installation	02/10/03	04/06/03	56	07-14	041	096		
2003	DSS 34	NIB - KA-Band Encoder Mech Mod-Kit Installation	02/10/03	03/02/03	21	07-09	041	061		
2003	DSS 34	NIB - Azimuth Axle Replacement	02/10/03	03/02/03	21	07-09	041	061		
2003		NIB - CCG Task	02/10/03	02/16/03	7	07-07	041	047		
2003	DSS 43	NIB - NSP Implementation	01/02/03	02/09/03	39	01-06	002	040		
2003		NSP Implementation	04/07/03	05/02/03	26	15-18	097	122		
2003		20 KW X-Band TXR Installation	07/21/03	08/31/03	42	30-35	202	243		
2003		NSP Implementation	04/21/03	05/12/03	22	17-20	111	132		
2003		70M Servo Drive Replacement	02/10/03	04/20/03	70	07-16	041	110		
2003		NIB - Ball-Joint Pad Refurbishment	02/10/03	04/20/03	70	07-16	041	110		
2003	DSS 63	NIB - NSP Implementation	02/10/03	04/06/03	56	07-14	041	096		
2003	DSS 65	NSP Implementation	01/07/03	02/09/03	34	02-06	007	040		
2004	DSS 14	Antenna Controller Replacement	07/05/04	10/03/04	91	28-40	187	277		

# CHANGES TO ANTENNA DOWNTIME SCHEDULE SINCE APRIL JURAP

- DSS-14 NSP added to the 2003 schedule
- DSS-15 NSP added to the 2003 schedule
- DSS-45 NSP added to the 2003 schedule
- DSS-54 NSP added to the 2003 schedule
- DSS-54 KA-band Encoder moved from 2002 to 2003
- DSS-65 Antenna Controller Replacement deleted from 2004

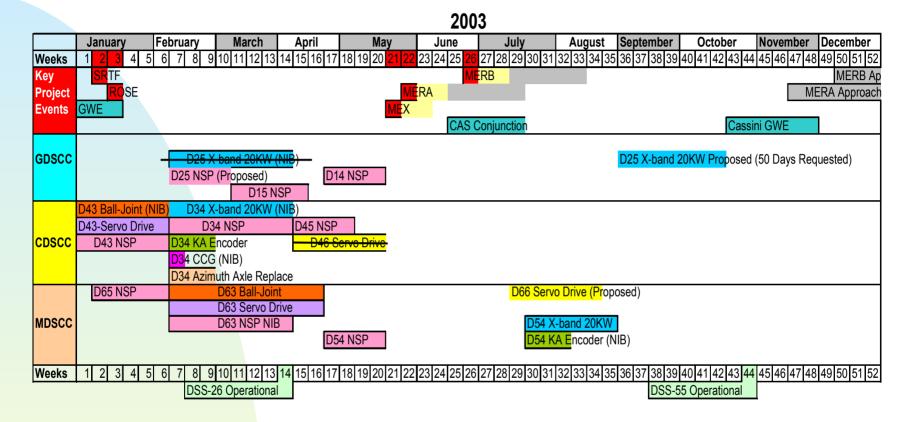
## **Major Antenna Downtimes**

### 2002



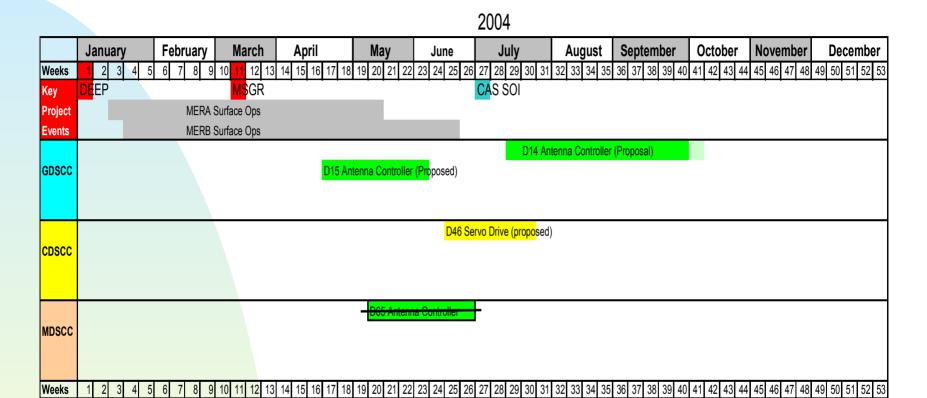
- DSS-16 Servo Drive Retrofit
- DSS-14 Servo Drive upgrade
- DSS-24 NSP/X-Band 20Kw
- DSS-24 Exciter Relocation
- DSS-54 Azimuth Axle replacement
- DSS-43 Ball-joint Pad Refurbishment & re-grout
- DSS-43 Servo Drive
- DSS-45 HVAC

## **Major Antenna Downtimes and Proposed Changes**



- •DSS-25 downtime in Weeks 11-14 will be returned to users
- •DSS-25 proposed X-Band downtime will need to be negotiated with DSN users
- •DSS-66 proposed Servo Drive downtime will need to be negotiated with DSN users
- •DSS-46 Servo Drive downtime has been returned to the users
- •DSS-65 NSP downtime in Week 01 has been returned to the users

## **Major Antenna Downtimes and Proposed Changes**



- •DSS-14 Antenna Controller Replacement (ACR) start time was moved from Week 28 to Week 29 to accommodate CASSINI SOI event in Week 27
- •DSS-65 ACR downtime has been returned to the users
- •DSS-15 proposed ACR downtime will need to be negotiated with the DSN users
- •DSS-46 proposed ACR downtime will need to be negotiated with the DSN users

## DSN RESOURCE IMPLEMENTATION PLANNING MATRIX

Station	Subnet	Delivery Date	S-Band Down	S-Band Up	X-Band Down	X-Band Up	20kW X-Band	Ka-Band Down	Ka-Band Up	NSP
DSS-14	70M	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	TBD	N/A	05/13/03
DSS-15	34HEF	XXXX	XXXX	N/A	XXXX	XXXX	XXXX	TBD	N/A	04/10/03
DSS-16	26M	XXXX	XXXX	XXXX	N/A	N/A	N/A	N/A	N/A	N/A
DSS-24	34B1	XXXX	XXXX	XXXX	XXXX	12/23/02	12/23/02	10/01/05	N/A	12/03/02
DSS-25	34B2	XXXX	N/A	N/A	XXXX	XXXX	04/07/03	XXXX	XXXX	04/07/03
DSS-26	34B2	04/02/03	N/A	N/A	04/02/03	04/02/03	04/02/03	04/02/03	N/A	04/02/03
DSS-27	34HSB	XXXX	XXXX	XXXX	N/A	N/A	N/A	N/A	N/A	N/A
DSS-34	34B1	XXXX	XXXX	XXXX	XXXX	XXXX	04/07/03	01/01/05	N/A	04/07/03
DSS-43	70M	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	TBD	N/A	02/10/03
DSS-45	34HEF	XXXX	XXXX	N/A	XXXX	XXXX	XXXX	TBD	N/A	05/03/03
DSS-46	26M	XXXX	XXXX	XXXX	N/A	N/A	N/A	N/A	N/A	N/A
DSS-54	34B1	XXXX	XXXX	XXXX	XXXX	XXXX	09/01/03	08/01/06	N/A	05/13/03
DSS-55	34B2	11/01/03	N/A	N/A	11/01/03	11/01/03	11/01/03	11/01/03	N/A	11/01/03
DSS-63	70M	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	TBD	N/A	04/07/03
DSS-65	34HEF	XXXX	XXXX	N/A	XXXX	XXXX	XXXX	TBD	N/A	02/10/03
DSS-66	26M	XXXX	XXXX	XXXX	N/A	N/A	N/A	N/A	N/A	N/A

XXXX = Capability Currently Exists

N/A = Capability Not Planned

05/09/02

## Goldstone Solar System Radar



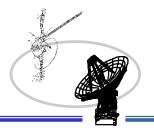
Martin A. Slade
May 16, 2002

NASA Jet Propulsion Laboratory

Joint Users Resource Allocation Planning Committee Meeting



## Goldstone Solar System Radar (GSSR)



- On April 21, 2002, GSSR achieved a major milestone, with the first Goldstone to Greenbank Telescope (GBT) asteroid detection (of NEA 1999 GU3). GSSR to GBT radar observations of 1999 GU3 were also successfully performed on April 22 and April 23. Single-station (DSS-14) only observations of 1999 GU3 on April 27, 2002, were less productive, with only CW radar data recorded on the Portable Fast Sample 3 Data Acquisition System.
- On May 13, 2002, the combination of Goldstone transmitting and the GBT receiving was successfully used to obtain observations of Mercury in support of MESSENGER Project goals of refining the obliquity of Mercury's pole.



# JOINT USERS RESOURCE ALLOCATION PLANNING COMMITTEE



Michelle Medina-Gussie (for Brad Compton) May 16, 2001



NASA / Jet Propulsion Laboratory

http://galileo.jpl.nasa.gov/



# GALILEO MILLENIUM MISSION

## **ROUTINE ACTIVITIES**

- Propulsion maintenance
- Gyro performance test
- Science instrument MROs



# GALILEO MILLENIUM MISSION

### **SIGNIFICANT EVENTS**

- Magnetometer, Dust Detector and Extreme Ultraviolet data are being collected during the cruise part of this orbit
- Four tests, designed to collect high resolution data, have been executed on the spacecraft to better characterize the DMS anomaly
- Both the Galileo flight spare and Magellan tape recorders are now in the testbed and tests are ongoing (the latter was removed from the spacecraft model in von Karman)

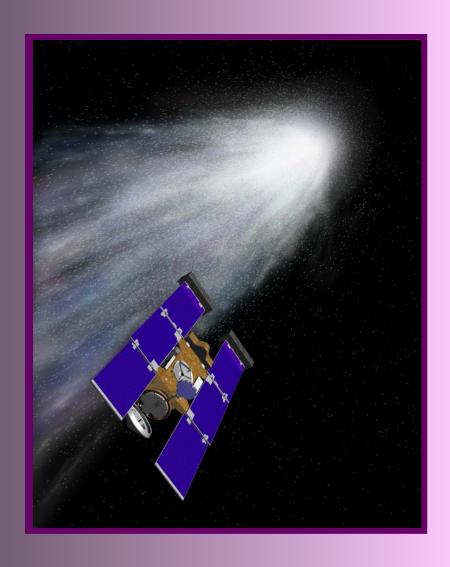


# GALILEO MILLENIUM MISSION

### **PROJECT PLANS**

- Resolve DMS anomaly
- Continue collecting MAG, DDS and EUV data
- Continue routine activities
- Next encounter Amalthea 34 on 5 November





JOINT USERS
RESOURCE ALLOCATION
PLANNING COMMITTEE

**R. E. Ryan** May 16, 2002

NASA Jet Propulsion Laboratory

http://stardust.jpl.nasa.gov



**Report to JURAP** 

### **STATUS**

SPACECRAFT IS HEALTHY (5/16/02)
PRESENTLY 2.40 AU from EARTH

00:39:55 RTLT

2.71 AU from SUN

#### SPACECRAFT IS IN CRUISE

- BIT RATE IS AT 504 bps (on HGA/34 HEF)
- EARTH RANGE IS DECREASING
- SPACECRAFT PASSED THROUGH APHELION OF 2.72 AU (Apr 17-18).
  - THE SOLAR PANELS, BATTERY AND POWER SYSTEM PERFORMED VERY WELL











**Report to JURAP** 

- CURRENT ACTIVITIES
  - MONITORING THE SPACECRAFT POWER SYSTEM NEAR MAX SOLAR RANGE FOR THIS AND THE NEXT APHELION
    - USED BLIND UPLINK AND 2 HOUR COMMUNICATION PERIODS TO MINIMIZE THE BATTERY DEPLETION CYCLE.
      - PROVIDED GOOD TELEMETRY, RANGING AND 2-WAY DOPPLER
  - PLANNING FOR ENCOUNTER TEST AT ANNEFRANK
    - SPACECRAFT TEST LAB HAS BEEN UPGRADED
    - NAV CAM NUCLEUS TRACKING S/W UPGRADE IN WORK

IPN SUPPORT HAS BEEN GOOD THIS PAST PERIOD











**Report to JURAP** 

http://stardust.jpl.nasa.gov

**UPCOMING EVENTS** 

INTERSTELLAR DUST COLLECTION 2
SECOND AEROGEL DEPLOY
JULY 27 TO DECEMBER 9, 2002

**TCM 7a - SEPTEMBER 18, 2002** 

ENCOUNTER TEST AT ANNEFRANK NOVEMBER 2, 2002

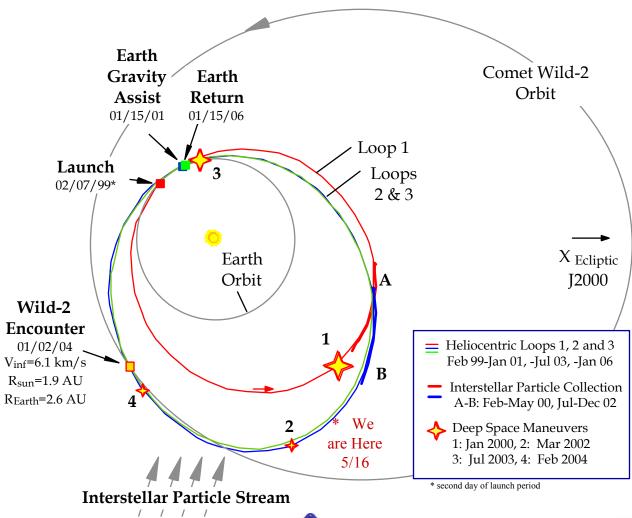








**Report to JURAP** 









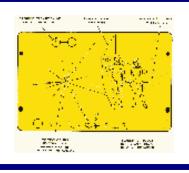




### Joint Users Resource Allocation Planning Committee

# PIONEER 10

**Bob Ryan May 16, 2002** 





# PIONEER 10 Report to JURAP

### **PIONEER 10 STATUS**

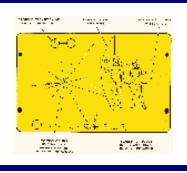
# SPACECRAFT IS HEALTHY A ROUNDTRIP CYCLE WAS SUCCESSFULLY COMPLETED APRIL 26-27

### **GOLDSTONE**

ON APRIL 26, DSS 14 TRANSMITTED THE UPLINK AT 191 KW

### **MADRID**

- 22 HOURS 27 MINS LATER, DSS 63 ACQUIRED THE DOWNLINK
- > S/C COLD WITH TEMPERATURE READINGS AT THE BOTTOM OF THE SCALE.
- > BUS VOLTAGE ABOUT 26 VOLTS (NOMINAL IS 28)
- ➤ DSS 63 LOCKED 16 bps AT-178.5dbm WITH AN SNR OF -0.5 db.
- **▶ GEIGER TUBE TELESCOPE INSTRUMENT RECEIVED 33 MINUTES OF DATA**





# PIONEER 10 Report to JURAP

### **PIONEER STATUS**

- SUPERIOR CONJUNCTION IS ON JUNE 7
  - NO ATTEMPT IN MAY OR JUNE
- JULY WILL BE THE NEXT RTLT CYCLE
- DSS 14 WILL BE OFF THE AIR FROM MID-JULY THROUGH SEPTEMBER
  - ANTENNA SERVO REPLACEMENT
    - DSS-14's HIGH POWER U/L, AND GENERAL TRACKING LOAD MEAN THE NEXT OPPORTUNITY WILL BE OCTOBER

THANKS TO THE TRACKING STATIONS, THE NOPES, AND TO ALL WHO PARTICIPATED



http://spaceprojects.arc.nasa.gov/Space Projects/pioneer/PNhome.html

JPL :

# Joint Users Resource Allocation Planning Committee (JURAP) Meeting

May 16, 2002

Presented by:

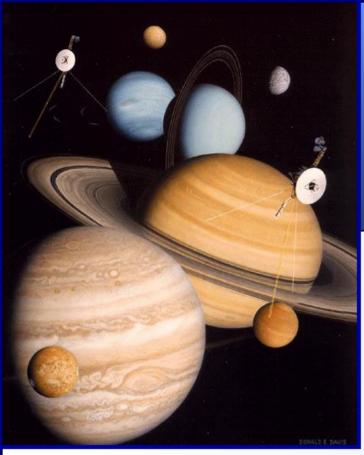
Pat Beyer

Chanara x-Ray Observatory

http://chandra.harvard.edu/index.html

# Chandra X-ray Observatory

- Ops support remains adequate
  - Some problems getting good data from CDR
  - Delays getting data from Madrid
- Project is supporting 26m auto as requested
- Looking to start inserting recurring activities in Midrange schedule vs. triplespace
- Recent Discoveries
  - Twin Quasars
  - Supermassive black holes in young Quasars
  - Strange Quark Stars



# VOYAGER

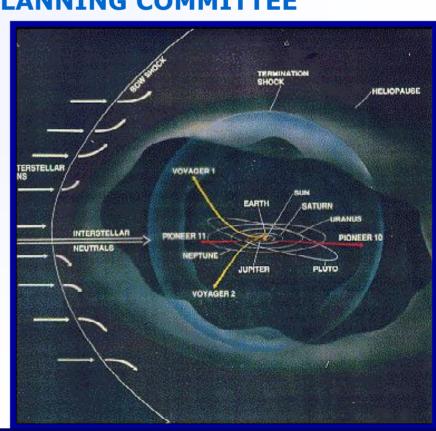
**FLIGHT OPERATIONS** 

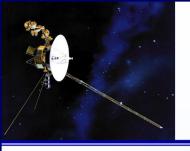
# JOINT USERS RESOURCE ALLOCATION PLANNING COMMITTEE

J. C. Hall, Jr. May 16, 2002 NASA Jet Propulsion Laboratory



http://voyager.jpl.nasa.gov







### **FLIGHT OPERATIONS**



### **FLIGHT SYSTEM STATUS**

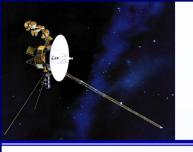
### **MISSION STATUS**

### VOYAGER 1

- HELIOCENTRIC DISTANCE 84.7 AU, RTLT 23h15m18s
- SPACECRAFT REMAINS HEALTHY
- MAJOR ACTIVITY: PLAYBACK, MAGROL, & ASCALS

### **VOYAGER 2**

- HELIOCENTRIC DISTANCE 67.1 AU, RTLT 18h27m32s
- SPACECRAFT REMAINS HEALTHY
- MAJOR ACTIVITY: MAGROL





### **FLIGHT OPERATIONS**



### **GROUND SYSTEM STATUS**

(April 13, 2002 – May 10,2002)

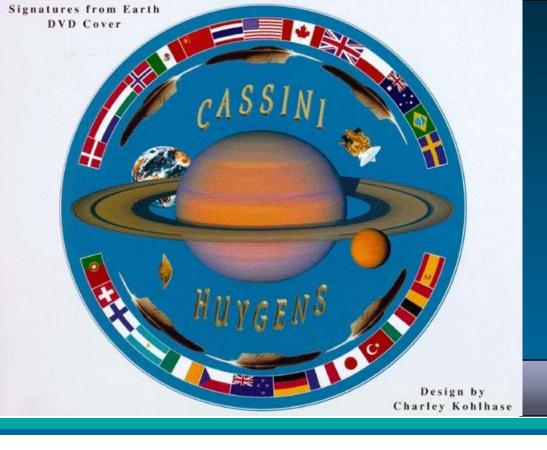
#### **DSN - OVERALL SUPPORT - GOOD**

• Continuing problems with the low power transmitter. Low power transmitter could not obtain the required 18kW transmit power.

### TOTAL SUPPORT TIME, OUTAGE TIME, % of OUTAGE TIME

S/C	SCHED SUPPORT	ACTUAL SUPPORT	70M TIME	SIGNIFICANT OUTAGE TIME	% of OUTAGE TIME
31	450.5	450.5	130.6	6.9 (1.3)	1.8
32	303.0	303.0	78.7	1.2 (0.6)	0.6

VOYAGER HOMEPAGE: <a href="http://vraptor.jpl.nasa.gov">http://vraptor.jpl.nasa.gov</a>





http://saturn.jpl.nasa.gov/cassini/index.shtml

# Joint Users Resource Allocation Planning (JURAP) Committee Meeting

Dave Doody May 16, 2002

NASA / Jet Propulsion Laboratory



- In Quiet Cruise Subphase through 8 July 2002
  - S/C remains HGA-to-Earth except for specific short activities
  - Next subphases are Space Science, Approach Science...
- Operations are Basically Nominal
  - Tour Science Planning continues
  - New reference trajectory released with latest Titan flyby geometry
  - Straw-person DSN Allocation request update presented for latter part of Tour
  - Further studies requested for JPL EC regarding communications strategy duting SOI
  - Decision in work on whether to pre-heat Huygens Probe before its mission
  - Minor S/C instrument adjustments, cals, and anomalies being worked near real time
    - Results of the last ISS decontamination are very encouraging,
      - From ~70% contamination down to ~5% to 7%
      - Further decontamination in progress thru DOY 155, subsequent plans TBD
    - Conducted RSS Pattern & boresight calibrations using S, X, Ka-band
      - Ka- demonstrated new U/L acquisition template
      - Ka-Translator on S/C remained in its "good" state



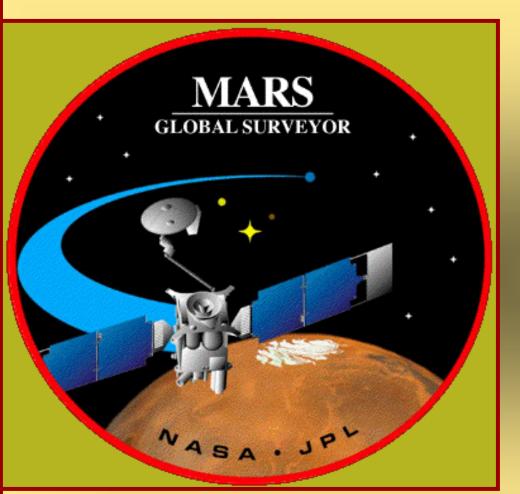
### DSN support

- NOP still being revised
- Routine tracking ops are going very well
- Minor anomalies being worked in real time, minimal data loss
- RNG problem continues under investigation
- Supported Array demo, NSP RNG, NSP Predicts demo passes
- NSP CMD with AMMOS v26.4/UPL D2 implementation making progress
  - Uplinked CMD Sequence C32 (189 packets) on NSP CMD
  - Received ok by S/C, however connection broke with CCP upon going active
  - Several minor problems remain in work

### Next Prime Mission Science

- Superior Conjunction RS experiment 2002 DOY 157 through 187
  - Meeting scheduled with NOPE, RS, Telecom, to discuss NMC / Ka-band EXC procedure
- GWE#2 2002 DOY 341 through 2003 DOY 016

# Mars Global Surveyor Flight Operations Status

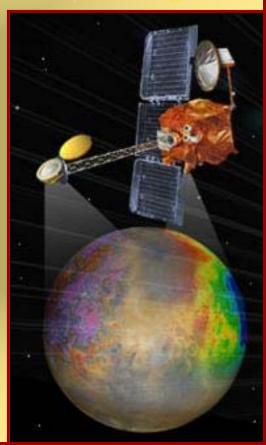


Presentation to the

Joint Users Resource Allocation Planning (JURAP) Meeting



E. E. Brower
May 16, 2001

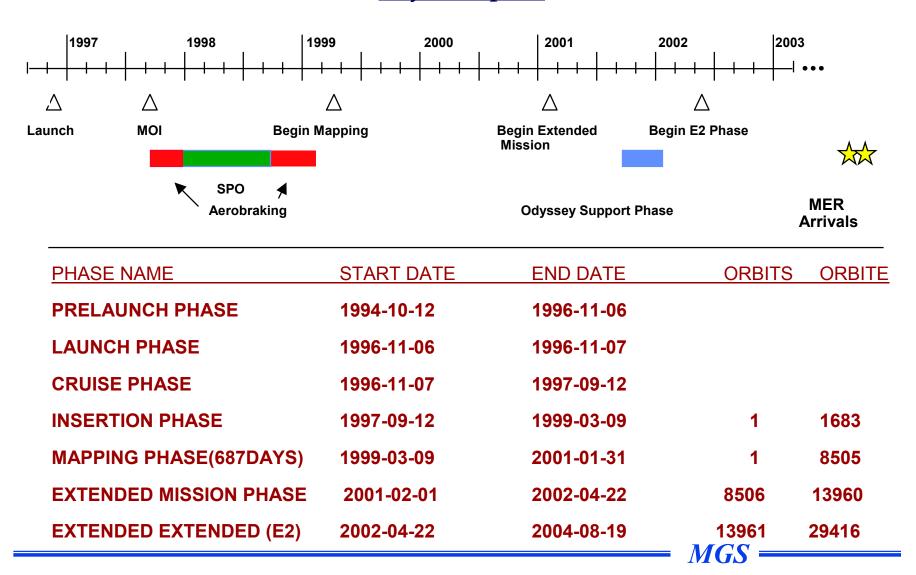


http://mars.jpl.nasa.gov/missions/present/globalsurveyor.html

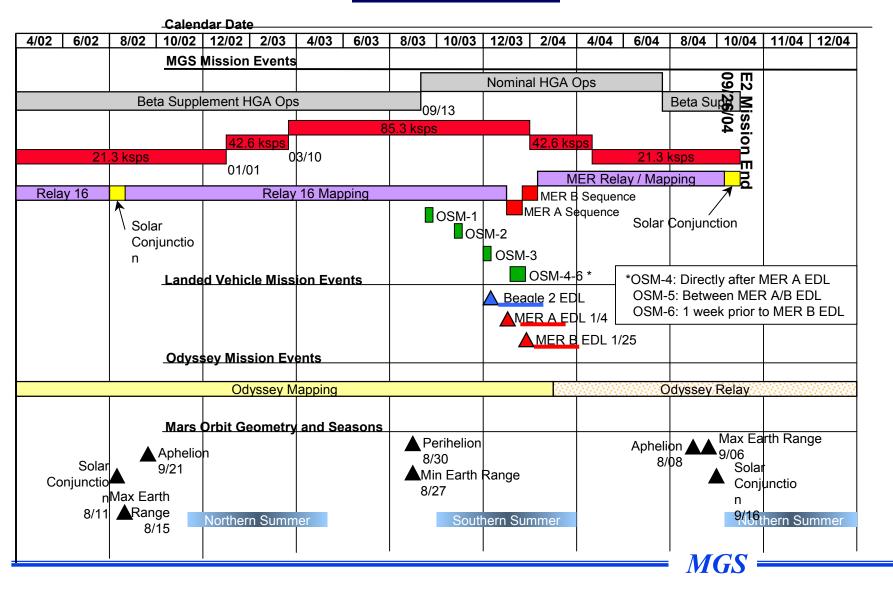
### <u>Agenda</u>

- Project Snapshot
- Recent Events/Accomplishments
- Mission Assessment
- Comments

### Project Snapshot



### E2 Mission Timeline



### Program / Project Status

**Technical** 

**Schedule** 

Resources

**Programmatic** 

JAN FEB MAR APR

JAN FEB MAR APR

JAN FEB MAR APR

JAN FEB MAR APR

G





























Detailed Description: (for items identified as yellow or red)

Technical:

Schedule:

Resources:

**Programmatic:** 

NOTE: This is a rolling 4-month picture





Major problem
Identified solution
Commitment is in jeopardy



### **Events**

<ul> <li>La</li> </ul>	st 3 N	Ionths:
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_	Contingency Mode entry after sf update	FEB 27
_	Beta Supplement transition	<b>MAR 13</b>
_	Minimum data rate	MAR 18 (20kbs)
_	Contingency Mode entry flurry event	APR 1
_	End of extended mission (E1)	<b>APR 22</b>
_	E2 Mission start	<b>APR 22</b>
_	E1 first half Archive Complete	APR 30
_	MOC Focus Tests	MAY 11-22

### Next 12 Months:

_	MMR	<b>MAY 15</b>
_	Uplink remaining flight software patch	<b>MAY 25</b>
_	Conduct ROTOs from Relay 16 w/o nadir	<b>MAY 25</b>
_	PSG	JULY 9
_	Solar Conjunction	<b>AUG</b> 11

### Recent Accomplishments

- Completed transition to Beta Supplement/Relay 16 & tested noncomm. ROTO
- Uplinked software patches to prevent STAREX reset nadir induced Cmode entry and processing time gaps
- C-mode and C-mode Lessons Learned Reviews held
- Completed MGS-MER ICD for EDL/Rover UHF relay support
- Released Task and Mission Plans for E2 Mission Phase
- Received PQ approval for E2 phase
- MGS Operations Lessons learned provided to MRO

### Mission Assessment

- Spacecraft is in good health.
- UHF tests on June25-28 to confirmed relay health.
- Expect to fulfill most extended mission objectives (complete MER site coverage may become E2 mission objective).
- Expect to satisfy MER EDL Requirements.
- Chances of operation through 2004 are good.

### **Comments**

• To close RARB Action Items 6, 7 and 9, the Mars Program Integrated Board has submitted to DSMS an integrated, altered, and reduced set of requirements along with a list of priorities for all Mars projects tracking in the 2003/2004 time frame. Any additional conflicts that are an outcome of the analysis for the August RARB will be worked at the time of the board meeting.

 If you have any questions regarding the information provided to DSMS, please don't hesitate to contact either Charles Whetsel or Belinda Arroyo.

MGS





### **ULYSSES**

#### JOINT USERS RESOURCE ALLOCATION PLANNING COMMITTEE

- SPACECRAFT OPERATIONS ARE NOMINAL. THE SPACECRAFT IS IN CONTINUOUS VIEW FROM THE NORTHERN HEMISPHERE AND OUT OF VIEW FROM THE SOUTHERN HEMISHERE.
- SPACECRAFT POWER AND THERMAL RECONFIGURATIONS AND INSTRUMENT CALIBRATIONS ARE PERFORMED AS REQUIRED.
- SPACECRAFT EARTH POINTING MANEUVERS ARE BEING PERFORMED EVERY 4 DAYS.



### Planetary Voyage:









Neptune

#### Did You Know?

The resolution of the Voyager narrow-angle television cameras was sharp enough to read a newspaper headline at a distance of one kilometer, or .62 miles.

See more Factoids

Fast Facts

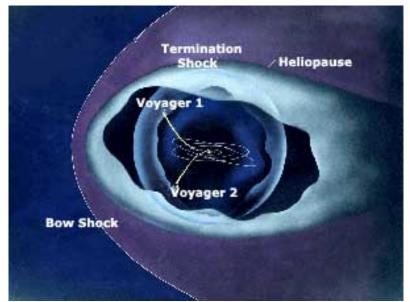
Related Links

#### The Greatest Space Adventurer

The Voyager mission, now in its 25th year, continues its quest to push the bounds of space exploration. The twin Voyager 1 and 2 spacecraft opened new vistas in space by greatly expanding our knowledge of Jupiter and Saturn. Voyager 2 then extended the planetary adventure when it flew by Uranus and Neptune, becoming the only spacecraft ever to visit these worlds.

Voyager 1, now the most distant human-made object in the universe, and Voyager 2, close on its heels, continue their ground-breaking journey with their current mission to study the region in space where the Sun's influence ends and the dark recesses of interstellar space begin. **More about the interstellar mission** 

### Where Voyager Is Going



(Click on the image for a larger view)

Deep Space Network









### A 25 Year Partnership

The Deep Space Network continues to support daily communications sessions with both of the now very distant Voyager-1 and Voyager-2 spacecraft.

Last update: April 3, 2002

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